Appl. No. 10/604,599
Amdt. dated March 01, 2005
Reply to Office action of December 14, 2004

AMENDMENTS TO THE CLAIMS

Claims 1 – 20 (cancelled)

5   21. (new) A color conversion apparatus for converting an input color being in a first color
space to an output color being in a second color space, wherein both the input color
and the output color include a plurality of color elements, the apparatus comprising:

a first lookup table being coupled to a first color element of the input color for
10   outputting a corresponding first converted color element;

a second lookup table being coupled to a second color element of the input color for
outputting a corresponding second converted color element; and

15   an adder circuit being coupled to the first lookup table and the second lookup table
for summing the first converted color element and the second converted color
element to thereby generate a color element of the output color.

22. (new) The apparatus of claim 21, further comprising:

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a gamma correction circuit being coupled to a third color element of the input color
for generating a gamma corrected color element;

wherein the adder circuit is further coupled to the gamma correction circuit for
25   summing the first converted color element, the second converted color element, and
the gamma corrected color element to thereby generate the color element of the
output color being in the second color space.

23. (new) The apparatus of claim 21, wherein the adder circuit is further coupled to a third

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color element of the input color and is for summing the first converted color

element, the second converted color element, and the third color element of the

input color to thereby generate a temporary color element.

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24. (new) The apparatus of claim 23, further comprising a gamma correction circuit being

coupled to the adder circuit for performing a gamma correction operation on the

temporary color element outputted by the adder to thereby generate the color

element of the output color being in the second color space.

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25. (new) The apparatus of claim 21, wherein the first lookup table maps a plurality of

values for the first color element of the input color to a single corresponding value

of the first converted color element, and the second lookup table maps a plurality of

values for the second color element of the input color to a single corresponding

15   value of the second converted color element.

26. (new) The apparatus of claim 25, wherein within the first lookup table, eight values of

the first color element of the input color map to a single corresponding value of the

first converted color element; and within the second lookup table, eight values of

20   the second color element of the input color map to a signal corresponding value of

the second converted color element.

27. (new) The apparatus of claim 21, wherein the first lookup table is indexed by using a

number of bits from values of the first color element of the input color; and the

25   second lookup table is indexed by using the number of bits from values of the

second color element of the input color.

28. (new) The apparatus of claim 27, wherein the number of bits comprise a number of

most significant bits.

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29. (new) The apparatus of claim 21, wherein both the first lookup table and the second
lookup table comprise a plurality of sub-tables for storing a relationship between the
first color space and the second color space.

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30. (new) The apparatus of claim 21, wherein the apparatus is utilized in a liquid crystal
display (LCD).

31. (new) A method for converting an input color being in a first color space to an output
10   color being in a second color space, wherein both the input color and the output
color include a plurality of color elements, the method comprising:

looking up a first color element of the input color in a first lookup table to determine
a corresponding first converted color element;

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looking up a second color element of the input color in a second lookup table to
determine a corresponding second converted color element; and

summing the first converted color element and the second converted color element
20   to thereby generate a color element of the output color.

32. (new) The method of claim 31, further comprising:

generating a gamma corrected color element according to a third color element of
25   the input color; and

summing the first converted color element, the second converted color element, and
the gamma corrected color element to thereby generate the color element of the
output color being in the second color space.

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33. (new) The method of claim 31, further comprising summing the first converted color
element, the second converted color element, and a third color element of the input
color to thereby generate a temporary color element.

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34. (new) The method of claim 33, further comprising performing a gamma correction
operation on the temporary color element of the output color to thereby generate the
color element of the output color being in the second color space.

10   35. (new) The method of claim 31, wherein the first lookup table maps a plurality of
values for the first color element of the input color to a single corresponding value
of the first converted color element, and the second lookup table maps a plurality of
values for the second color element of the input color to a single corresponding
value of the second converted color element.

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36. (new) The method of claim 35, wherein within the first lookup table, eight values of
the first color element of the input color map to a single corresponding value of the
first converted color element; and within the second lookup table, eight values of
the second color element of the input color map to a signal corresponding value of
20   the second converted color element.

37. (new) The method of claim 31, further comprising:

indexing the first lookup table by a number of bits from values of the first color
25   element of the input color; and

indexing the second lookup table by the number of bits from values of the second
color element of the input color.

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38. (new) The method of claim 37, wherein the number of bits comprise a number of most

significant bits.

5   39. (new) The method of claim 31, further comprising storing a relationship between the

first color space and the second color space within a plurality of sub-tables in both

the first lookup table and the second lookup table.

40. (new) The method of claim 31, wherein the method is utilized in a liquid crystal

10   display (LCD).

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